PORTSMOUTH - PEIRCE ISLAND WWTF
PORTSMOUTH, NEW HAMPSHIRE
NPDES PERMIT NO. NH0100234
EFFECTIVE DATE: AUGUST 1, 2007

WWTF UPGRADE (from Advanced Primary to Secondary Treatment)
NPDES/CWA POLLUTANT REDUCTION CALCULATIONS (using ICIS data from 1/1/11 - 12/31/12):

YY/MONTH	FLOW MO AVG (MGD)	BOD MO AVG (MG/L)	TSS MO AVG (MG/L)
11-Jan	3.99	134.1	65.8
11-Feb	5.28	127.6	66.8
11-Mar	9.68	74.5	43.7
11-Apr	7.328	81.7	45.7
11-May	5.88	107.3	70.2
11-Jun	4.85	148.9	61.6
11-Jul	3.73	176.9	71.3
11-Aug	4.35	151.6	73.9
11-Sep	4.44	160.1	58.9
11-Oct	7.06	111.1	48.4
11-Nov	5.64	110.2	48.2
11-Dec	5.82	131.5	39.7
12-Jan	5.35	131.9	52.8
12-Feb	4.5	148.4	58
12-Mar	5.4	136.5	55.1
12-Apr	4.39	160.6	46.7
12-May	5.19	132.1	49.8
12-Jun	6.11	114.4	54.3
12-Jul	3.9	157.6	62.8
12-Aug	3.85	172.9	57.3
12-Sep	3.39	203.1	68.2
12-Oct	3.81	172.2	67.3
12-Nov	3.49	143.7	67.8
12-Dec	5.37	109.9	48.8
AVG EFFLUENT CONCENTRATION (MG/L) =	5.117	137.450	57.629
MO AVG PERMIT LIMIT (MG/L) =		30	30
POLLUTANT CONCENTRATION REDUCTION (MG/L) =		107.5	27.6
POLLUTANT LOADING REDUCTION (LBS/DAY) =		4,585.14	1,179.00
POLLUTANT LOADING REDUCTION (LBS/YEAR) =		**1,673,576**	**430,335**

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WWTF UPGRADE (from Advanced Primary to Secondary Treatment)
NPDES/CWA POLLUTANT REDUCTION CALCULATIONS (using ICIS data from 5/08 - 4/09):

	FLOW MO AVG (MGD)	BOD MO AVG (MG/L)	TSS MO AVG (MG/L)
May-08	4.357	97	54
June-08	4.430	95	60
July-08	5.308	82	43
August-08	4.444	107	46
September-08	6.268	93	47
October-08	5.477	83	39
November-08	5.137	74	31
December-08	8.036	70	38
January-09	5.041	95.3	46.4
February-09	6.903	69.3	47.4
March-09	7.871	59.7	47.2
April-09	7.385	57.6	37.5
AVG EFFLUENT CONCENTRATION (MG/L) =	5.888	81.9	44.7
MO AVG PERMIT LIMIT (MG/L) =		30	30
POLLUTANT CONCENTRATION REDUCTION (MG/L) =		51.9	14.7
POLLUTANT LOADING REDUCTION (LBS/DAY) =		2,549.04	722.28
POLLUTANT LOADING REDUCTION (LBS/YEAR) =		**930,401**	**263,631**

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CSO Abatement - Targetted Sewer Separation (New Sanitary Sewers and New Storm Water Drainage System)

Reference: *April 2005 CSO Long Term Control Plan, City of Portsmouth, New Hampshire*, prepared by Underwood Engineers, Inc. ("2005 LTCP")

CURRENT CONDITIONS (See SWMM model CSO discharge projections from pages 4-6 and 4-7 of the 2005 LTCP):
ANNUAL AVERAGE CSO VOLUME = 13,000,000 GALLONS
ANNUAL AVERAGE CSO FREQUENCY = 12 EVENTS

FUTURE CONDITIONS (After implementing the CSO abatement plan of targetted sewer separation. See page 6-5 of the 2005 LTCP.)
ANNUAL AVERAGE CSO VOLUME = 600,000 GALLONS in a 5-year storm, therefore, 0 GALLONS in a typical year
ANNUAL AVERAGE CSO FREQUENCY = 0 EVENTS

TYPICAL POLLUTANT CONCENTRATIONS (IN MG/L) IN CSO DISCHARGES (See Table 3-2 on page 3-4 of the 2005 LTCP.)

DATE	AVG BOD (MG/L)	AVG TSS (MG/L)
9/15/1990	64	151
9/23/1990	46	78
10/9/1990	60	142
10/13/1990	50	119
10/23/1990	70	138
AVG CONCENTRATION (IN MG/L):	58	125.6

ANNUAL CSO VOLUME REDUCTION = 13,000,000 = 13 MG

BOD REDUCTION (LBS/YEAR) = (58 MG/L - 30 MG/L) X 13 MGY X 8.34 X 1 YEAR = 3,036
TSS REDUCTION (LBS/YEAR) = (125.6 MG/L - 30 MG/L) X 13 MGY X 8.34 X 1 YEAR = 10,365